

Risk, Prevention, and Management of HIV, HBV, and HCV (4/04)

Cleveland JL, Cardo DM. Occupational exposures to human immunodeficiency virus, hepatitis B virus, and hepatitis C virus: risk, prevention, and management. *Dent Clinics of North America* 2003;47:681–696.

The transmission of bloodborne viruses in dental health-care settings can have serious consequences but is fortunately a rare event. After reviewing the risk of infection with the three bloodborne viruses of most concern in occupational transmission, human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV), this article reviews their prevention and the management of potential exposures. Postexposure prophylaxis (PEP) is discussed in detail for HIV, HBV, and HCV. Pre-exposure hepatitis B vaccination and the use of standard precautions to prevent exposure to blood are the most effective strategies for preventing dental health-care personnel (DHCP) from occupational exposure to occupational infection with HIV, HBV, or HCV. Each dental health-care facility should develop a comprehensive written program for preventing and managing occupational exposures that (1) describes the type of blood exposures that may place DHCP at risk for infection; (2) outlines procedures for promptly reporting and evaluating such exposures; and (3) identifies a health-care professional who is qualified to provide counseling and perform all medical evaluations and procedures in accordance with the most current U.S. Public Health Service (CDC) recommendations. Finally resources should be available that permit rapid access to clinical care, testing, counseling, and PEP for exposed DHCP and the testing and counseling of source patients.



DIS Comment: Exposures that might place DHCP at risk of HIV, HBV, and HCV infection include percutaneous injuries (e.g., needlestick or cut with a sharp object), or contact between potentially infectious blood, tissues, or other body fluids and mucous membranes of the eye, nose, or mouth or nonintact skin (e.g., exposed skin that is chapped, abraded, or afflicted with dermatitis). Percutaneous injuries pose a greater risk of transmission. The majority of exposures in dentistry are preventable, and methods to reduce the risk of blood contacts have included use of standard precautions and engineering controls, and modifications of work practices. These approaches might have contributed to the decrease in percutaneous injuries among dentists during recent years. However, needlesticks and other blood contacts continue to occur, which is a concern because percutaneous injuries pose the greatest risk of transmission.



Engineering controls remove or isolate a hazard in the workplace. In the context of sharps injury prevention, engineering controls include sharps disposal containers and needles and other sharps devices with an integrated engineered sharps injury prevention feature. The emphasis on engineering controls has led to the development of many types of devices with engineered sharps injury prevention features. With the current focus on engineered technology, there is little new information on the use of work-practice controls to reduce the risk of sharps injuries during patient care. However, work-practice controls are an important adjunct for preventing blood exposures, including percutaneous injuries. Examples include:

- Using a one-handed scoop technique, a mechanical device designed for holding the needle cap to facilitate one-handed recapping, or an engineered sharps injury protection device (e.g., needles with re-sheathing mechanisms) for recapping needles between uses and before disposal;
- Not bending or breaking needles before disposal;
- Avoiding passing a syringe with an unsheathed needle;
- Removing burs before disassembling the handpiece from the dental unit;
- Using instruments, rather than fingers, to grasp needles, retract tissue, and load/unload needles and scalpels;
- Placing used disposable syringes and needles, scalpel blades, and other sharp items in appropriate puncture-resistant containers located as close as feasible to where the items were used; and
- Giving verbal announcements when passing sharps.

Postexposure management is an integral component of a complete program to prevent infection after an occupational exposure to blood. During dental procedures, saliva is predictably contaminated with blood. Even when blood is not visible, it can still be present in limited quantities and therefore is considered a potentially infectious material by OSHA. A qualified health-care professional should evaluate any occupational exposure incident to blood or OPIM, including saliva, regardless of whether blood is visible, in dental settings. The CDC Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis can be found at: http://www.cdc.gov/ncidod/dhqp/gl_occupational.html.